

REMARKS

Claims 1-6 have been amended to make a number of editorial revisions. These revisions have been made to place the claims in better U.S. form. None of these amendments have been made to narrow the scope of protection of the claims, nor to address issues related to patentability and therefore, these amendments should not be construed as limiting the scope of equivalents of the claimed features offered by the doctrine of Equivalents. Enclosed is a marked-up copy of claims 1-6 labeled "Version with Markings to Show Changes Made" indicating the changes to claims 1-6.

Further, claims 7-10 have been cancelled and are replaced with new claims 11 and 12. New claims 11 and 12 are similar to original claims 7 and 8, and 9 and 10, respectively, and have been drafted in better U.S. form.

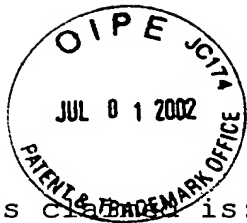
In light of the above, examination of the present application on the merits is respectfully requested.

Respectfully submitted,

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What is claimed is:

1. ^(Amended) A_n information recording medium storing digital data and management information managing the digital data, wherein

the management information comprises:

first time map information provided for a first object that is a digital stream ^{having packet-multiplexed} ~~in which~~ digital data ~~is~~ ~~packet-multiplexed~~, and in which, for each predetermined unit, ^{of the packet-multiplexed digital data} an address ^{information recording} on the medium ^{packet-multiplexed} of the digital data is related to a playback time of the digital data and stored to the medium; and

^{information recording} second time map information provided for a second object that is a digital stream ^{having packet-multiplexed} ~~in which~~ digital data ~~is~~ ~~packet-multiplexed~~ for each predetermined unit ^{and} ^{of the packet-multiplexed} of which ^{digital data} ~~contents~~ ^{playback time} can not be identified, and in which, for each ~~predetermined unit~~ ^{information recording} an address ^{packet-multiplexed} on the medium of the digital data is related to an arrival time of the ^{unit} ~~packet~~ and stored to the medium.

2. ^(Amended) The information recording medium according to claim 1, wherein the first object and the second object are recorded separately ^{on the information recording medium} to different object files.

3. ^(Amended) A recording apparatus for recording a digital stream ^{having} ~~in which~~ digital data ~~is~~ packet-multiplexed to a recording medium, wherein:

^{being} the recording medium, capable of storing first time map information in which, for each predetermined unit, ^{of packet-multiplexed} an address ^{recording} on the medium ^{packet-multiplexed} of the digital data is related to ^{digital data} data

a playback time of the ^{packet-multiplexed} digital data and stored, and second time map information in which, for each predetermined unit, ^{of packet-multiplexed digital data} an address ^{recording} on the ^{packet-multiplexed} medium of the digital data is related to an arrival time of the ^{UNIT} packet and stored/,

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^{said recording} the apparatus ^{comprising} comprises

an I/F section ^{being operable to} that receives the digital stream, from external,

a map creation section ^{being operable to} that creates the time map information according to the received digital stream/; and

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a recording section ^{being operable to} that records ^{received} the digital stream and the time map information to the recording medium/; and

^{wherein} in recording the digital stream to the recording medium, ^{said} the map creation section analyzes the ^{received} digital stream, and based on the analysis ^{of the received digital stream} result creates the first

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time map information ^{as the time map information} when the playback time information can be identified, or creates the second time map information ^{as the time map information} when the playback time information can not be identified.

(Amended)

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4. ^{having} A recording method of recording a digital stream in which digital data is ^{being} packet-multiplexed to a recording medium, wherein

the recording medium ^{being} is capable of storing

first time map information in which, for each predetermined unit, ^{of packet-multiplexed digital data} an address ^{recording} on the ^{packet-multiplexed} medium of the digital data is related to a playback time of the ^{packet-multiplexed} digital data and

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stored, and second time map information in which, for each predetermined unit, ^{of packet-multiplexed digital data} an address ^{recording} on the ^{packet-multiplexed} medium of the digital data is related to an arrival time of the ^{UNIT} packet and stored/, and

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^{said recording} the method ^{comprising} comprises

analyzing the digital stream for recording the digital stream to the recording medium/;

creating ^{time map information, wherein the time map information is} the first time map information when the playback time ~~information~~ can be identified, or ~~creating~~ the second time map information when the playback time ~~information~~ can not be identified, based on ^{said analyzing of the digital stream} the analysis result/; and

recording the digital stream and the time map information to the recording medium.

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(Amended)
5. A reproducing apparatus for reproducing information from a recording medium storing a digital stream ^{having} in which digital data is packet-multiplexed, wherein:

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the recording medium ^{being} is capable of storing first time map information in which, for each predetermined unit ^{of packet-multiplexed digital data}, an address ^{recording} on the ^{packet-multiplexed} medium of the ^{packet-multiplexed} digital data is related to a playback time of the ^{packet-multiplexed} digital data and stored, and second time map information in which, for each predetermined unit ^{of packet-multiplexed digital data}, an address ^{recording} on the ^{packet-multiplexed} medium of the ^{packet-multiplexed} digital data is related to an arrival time of the ^{unit} packet and stored/;

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the apparatus ^{said reproducing} comprises ^{being operable to} comprising:

a reproducing section ^{being operable to} that reads and reproduces the digital stream from the recording medium/;

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an I/F section ^{being operable to} that receives information to designate the digital stream to be reproduced and information to designate ^{being operable to} start time of the playback/; and

a control section ^{being operable to} to control the ^{said} reproducing section/; and

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wherein ^{said} the control section controls ^{said} the reproducing

section so as to determine whether ~~the~~ time map information of the ~~designated~~ digital stream is the first time map information or the second time map information, specify a read address with reference to the time map information by using a time axis according to ^athe type of the time map information, and then start the playback from the specified ^{read} address. ✓

(Amended)

6. A reproducing method of reproducing information from a recording medium storing a digital stream ^{having} ~~in which~~ digital data ~~is packet-multiplexed, wherein~~ ✓

the recording medium ^{being} is capable of storing first time map information in which, for each predetermined unit, ^{of packet-multiplexed digital data} an address ^{recording} on the ^{medium} of the ^{packet-multiplexed} digital data is related to a playback time of the ^{packet-multiplexed} digital data and stored, and second time map information in which, for each predetermined unit, ^{of packet-multiplexed digital data} an address ^{recording} on the ^{medium} of the ^{packet-multiplexed} digital data is related to an arrival time of the ^{unit} packet and stored, ^{said reproducing} ✓

^{comprising} the method comprises

20 reading and reproducing the digital stream from the recording medium/;

receiving information to designate the digital stream to be reproduced and information to designate ^astart time of ~~the~~ playback/; and

25 controlling the playback/, and

^{wherein said} the controlling comprises determining whether ~~the~~ time map information of the ~~designated~~ digital stream is the first time map information or the second time map information, specifying a read address with reference to the time map information by using a time axis according to

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^a
~~the~~ type of the time map information, and then starting the
^{read}
playback from the specified [^]address. ✓

5 cancelled { 7. A program capable of enabling a computer to
operate as the recording apparatus according to claim 3.

8. A computer readable recording medium storing the
program according to claim 7.

10 cancelled { 9. A program capable of enabling a computer to
operate as the reproducing apparatus according to claim 5.

10. A computer readable recording medium storing the
program according to claim 9.